REMARKS

Status of the Application:

This paper is filed in response to the Office Action mailed on August 23, 2007 (hereinafter, the "Office Action"). At the time the Office Action was mailed, claims 1-6 and 8-16 were pending in the application. Claims 12-14 were withdrawn without prejudice, subject to the restriction requirement in the Office Action dated December 14, 2006. In the instant response, claim 1 has been amended, claims 15-16 have been cancelled, and claims 17-25 have been added. Support for the new claims can be found throughout the application. For example, support for claims 17 and 18 can be found in Example 2 and Figure 4; support for claims 17-25 can be found in Examples 1 and 2. Therefore, upon entry of the instant amendment, claims 1-6, 8-11, and 17-25 will be before the Examiner for consideration.

Rejections Under 35 U.S.C. § 112, second paragraph:

Applicant thanks the Examiner for the withdrawal of the rejection of claims 1-11 under 35 U.S.C. § 112, second paragraph as being indefinite for allegedly failing to point out and distinctly claim the subject matter which Applicant regards as the invention.

Rejections Under 35 U.S.C. § 112, first paragraph:

1. Enablement.

Applicant thanks the Examiner for the withdrawal of the rejection of claims 1-11 under 35 U.S.C. § 112, first paragraph for scope of enablement.

2. Written Description.

The Examiner has maintained the rejection of claims 1-6, 8-11, and 16 for lack of enablement for the reasons of record. The limitations of claim 15 have been incorporated into claim 1, the only independent claim in the rejection. Therefore, claim 1 is enabled as are claims 2-6, 8-11, and 16-18 which are dependent thereon. Withdrawal of the rejection is respectfully requested.

Rejections Under 35 U.S.C. § 103:

The Examiner has maintained the rejection of claims 1-6, 8-11 and 15 under 35 U.S.C. § 103 as being unpatentable over Kosaka et al. (Exp. Cell Res. 245:245-251, 1998; "Kosaka") and Haruta et al. (Nature Neurosci. 4:1163-1164, 2001; "Haruta") in view of Reynolds and Weiss (Science 255:1701-1710, 1992; "Reynolds").

Applicant respectfully disagree. Kosaka and Haruta teach that iris pigmented epithelial cells of chicks or mammals were successfully isolated and cultured. However, neither of the documents suggests or discloses a floated coagulated mass culturing technique (neurosphere method) for cells isolated from such a source.

Reynolds describes the coagulated mass culturing technique, but neither teaches nor suggests the use of the method for iris pigmented epithelial cells isolated from chicks or mammals. The Reynolds reference teaches the use of the mass culturing technique only for neuronal cells.

It is known in the art that primary cells are difficult to culture. Therefore, it is not obvious to use a specific and specialized method for culture of one type of cell, neuronal cells, and apply it to the culture of a completely different type of cell, an epithelial cell. At the time of the filing of the instant application, the floating mass culturing method was considered to be for selectively culturing neural stem cells. Therefore, the combination of Reynolds with Kosaka and Haruta is taught against. One skilled in the art would not find suggestion or motivation to combine the references or expect success in the combination of the methods of culturing neuronal cells is not predictive of methods for culturing epithelial cells.

Even if the documents describes some elements of the invention, a person skilled in the art would not expect that the method could be used for the generation of myocardial cells, as claimed. Moreover, one would not be motivated to test for the expression of a gene specific for myocardial cells as in newly added claims 17 and 22. One skilled in the art would not expect to be able to generate myocardial cells by culturing the iris pigment epithelial cells by the floated coagulated mass technique.

A surprising element of the invention includes the ability to selectively culture stem cells that are differentiable into various types of tissue by culturing iris pigmented epithelial cells by the floated mass coagulation technique. As this result could not be

expected by the teachings of the prior references, the claimed methods could not be obvious in view of the cited art. Withdrawal of the rejection of claims 1-6, 8-11 and 15 for obviousness is respectfully requested.

Newly added claims 17-25:

Applicants have added new claims 17-25. Applicant submits that the claims are clear, fully supported by the specification as filed, and are both novel and non-obvious over the cited art. Entry and allowance of the claims is respectfully requested.

Conclusion:

In view of the amendments and arguments presented herein, Applicants submit that the claims are in condition for allowance. Early and favorable action is requested.

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Respectfully submitted,

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